

2012 U.S. Gas Shale Basin Production Operations Study:

ASSESS YOUR 2011 COST & UPTIME PERFORMANCE AGAINST PEERS IN EACH BASIN

- Key Tool for Operations
- Increase Uptime
- Identify Opportunities
- Optimize Cost



To help you manage your future!
**Operations Performance Analysis:
by Engineers, for Engineers**

What Clients Say:

"We find the Ziff Energy reports to be comprehensive, well written, and most importantly, consistently objective ... The resulting analysis is of high quality and integrity ... Without the Ziff tools, we would find it very difficult to objectively measure."

Senior VP, Canadian Major

"The scope and format of the study assisted us in focusing on specific areas of improvement. The presentation of the results of the study was concise and informative and reflected considerable knowledge of operations ... As a result, we have been able to dramatically improve our operational efficiencies and lower our costs."

Vice President, Super-Major

"We got more than what we paid for, which is a pleasure to say. I would recommend this process to any company wanting to move from the 'also ran class' to 'best of class.'"

Operations Manager,
Independent Producer

"We are pleased with your work ... Ziff delivers the full package, a statistically rigorous analysis coupled with real suggestions that can be used to improve operating performance. It is refreshing to work with Ziff's staff, which consists of industry professionals who are knowledgeable and experienced."

Development Manager,
Large Independent Producer

2012 U.S. GAS SHALE BASIN PRODUCTION OPERATIONS STUDY: ASSESS YOUR 2011 COST & UPTIME PERFORMANCE AGAINST PEERS IN EACH BASIN

Are your Gas Shale assets performing well?

Would a review of your significant operated shale assets be timely?

This study highlights quick and direct cost reduction opportunities.

Gas Shale resources are becoming the "new conventional" gas supply, and improving the efficiency of their production operations will become increasingly important. It is not easy to identify which operating cost areas offer the greatest potential for reduction and meaningful savings, and whether field operations are operating at maximum uptime. Ziff Energy's analysis will focus on:

1. **COST** - for each **gas shale basin**, compare, on a **blinded basis**, unit operating costs, by operator: the total and by (standardized) detailed cost category.
2. **UPTIME** - assess the **production efficiency** of each operator in each gas shale basin, and identify production improvement targets.

Many companies capture large operating cost savings through our production operations benchmarking.

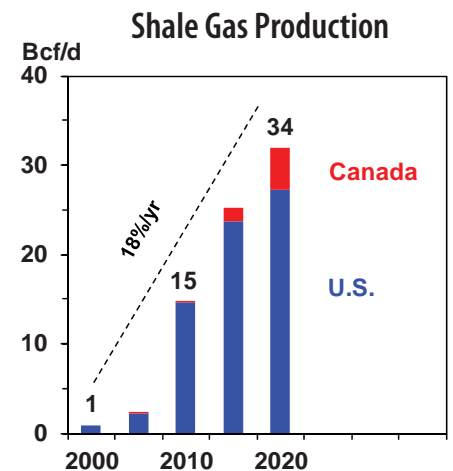
This study provides:

- a detailed analysis for each gas shale basin in which your company operates, as well as metrics for those in which you currently do not
- basin-level diagnostics for your company, using cost performance signals by cost category, including water handling, compression and gathering, as well as measures of employee productivity and average well productivity
- our new & unique Uptime Analysis identifies issues of Reliability to increase Production
- an evaluation of your severance and ad valorem taxes by basin
- an evaluation of gas used for compression in your shale operations
- identification of key areas under-performing, enabling your team to focus on appropriate solutions to optimize costs and maximize production.

Cost Driver Analysis - Key Drivers for Gas Shale Operations

Ziff Energy will undertake a comprehensive analysis of the following key cost drivers:

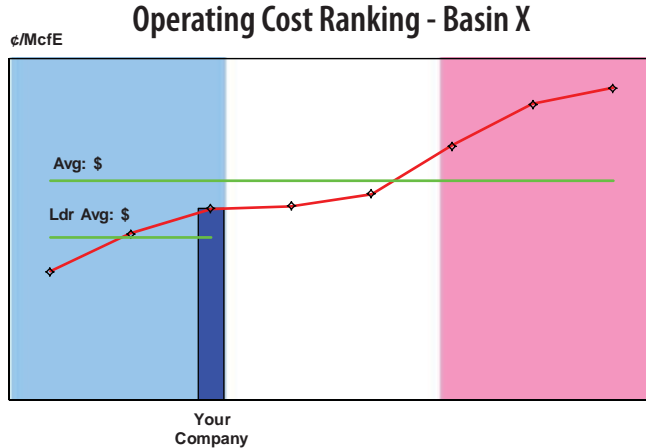
- Water Handling
- Gathering
- Compression
- Well Productivity
- Labor
- Energy (Electricity and Fuel Gas).



KEY FEATURES

A. COST - Key Components Analyzed

Our Categories of key controllable costs focus on difficult operational challenges such as energy use, gathering and water handling. We pinpoint excessive expenses and identify the **savings potential for each important cost category for each shale basin.**



B. Uptime/Reliability Analysis - What is "Best in Class" for your Assets?

Our review of daily production identifies valuable **lost production** opportunities.

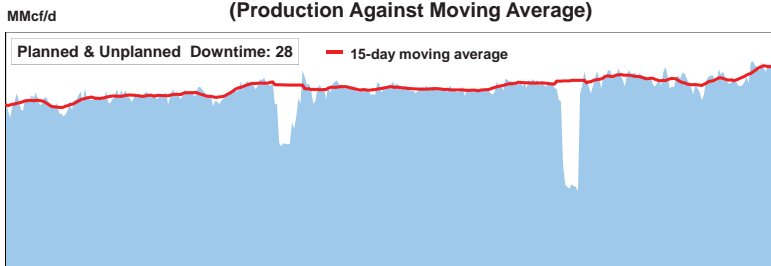
Our operating efficiency assesses your shale production for:

- the frequency & impact of production downtime incidents
- production and \$\$ lost to downtime
- uptime reliability - the Ziff Production Reliability Index (RI) determined as the ratio of the frequency and duration of incidents.

Predicted Production Capacity vs. Actual Daily Production



Downtime Incident Identification (Production Against Moving Average)



"We encourage other operators to participate in Ziff Energy's multi-client benchmarking projects.

Some of the benefits are:

- *standardized cost data & peer field comparison*
- *points to areas where we may have gaps in performance*
- *the results encourage us to take a look at our operating metrics and understand the drivers and where to focus our time and efforts*
- *(uptime) reliability metrics*
- *automated data gathering takes effort away from staff, who are stretched these days."*

VP, Large Independent Producer

"Immensely impressive ... much more detailed than other benchmarking studies."

President, Major

"We have been benchmarking with Ziff Energy for almost a decade now, so we are believers in the data. Our costs were still climbing... We thought we had good disciplines. We thought we were doing well, but the data told us otherwise... We asked them [Ziff Energy], to help out... to share some of the best practices they had seen in the industry..."

- *in 2009 & 2010, we managed to flatten our operating costs – the overall operating expenditure was a little bit lower than our growth*
- *in 2009, we saved \$23 million*
- *in 2010, we saved \$40 million."*

Technical Director,
International Independent

"The value for changes we implemented was estimated at \$5 million, a very good return!"

Senior Engineer,
International Major

STUDY DELIVERABLES

You receive:

- Customized Diagnostic Analysis - targets for each gas shale basin & cost category
- Customized Executive Summary
- Private Debriefings with Ziff Energy's operations advisors
- Data Collection Support.

Submit Data Electronically - Much Easier!

Our improved electronic data cost gathering approach is based on your own cost data structure --- data retrieval is far easier, & fast! Ask us about **Electronic Data Gathering** from your SAP or accounting system.

Ziff Energy's Center for Benchmarking Excellence

In 2007, Ziff Energy established a unique World Upstream "Center for Benchmarking Excellence", to ensure that Ziff Energy studies for upstream operations are the best conceived and executed.

The core group, mainly based in Calgary, comprises a full time cadre of Analysts, currently professional engineers and economists who each have 5-15 years of experience and a Masters or B.Sc. in Engineering or Economics. The group works with Project Managers, Directors, VP's, and Ziff Energy's team of International Associates, based in various countries, who each have 15-30+ years of E&P operations experience. They are supported by two full time IT team members and a leading desktop publishing team.

You are invited to participate in this effective analysis and gain the benefits

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Why Ziff Energy?

Since 1996, Ziff Energy has completed over 190 operations performance studies, assisting 100+ E&P companies in 40+ countries to improve Operations Efficiency and Reliability by comparing performance against similar gas or oil fields (to date, over 4,000 oil and gas fields have been analyzed in our field operations studies). We are Upstream Professionals with 20+ years experience and have the knowledge and background to provide specific and actionable solutions. Our 'Center for Benchmarking Excellence' was established in 2007 to ensure that Ziff Energy studies for upstream operations are the best executed through Automated Data Gathering and centralized control of data integrity, review & analysis.

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